WHAT IS CLAIMED IS:

1. A semiconductor device comprising:

a substrate;

an undercoat layer formed on said substrate and containing metal nitride; and

a group III nitride compound semiconductor layer formed on said undercoat layer.

2. A semiconductor device according to claim 1, wherein a face of said undercoat layer touching said group III nitride compound semiconductor layer is formed of said metal nitride.

3. A semiconductor device according to claim 1, wherein said undercoat layer is substantially formed of only metal nitride.

4. A semiconductor device according to claim 1, wherein said undercoat layer contains at least one member selected from the group consisting of titanium nitride, zirconium nitride, hafnium nitride, and tantalum nitride.

5. A semiconductor device according to claim 1, wherein said substrate is formed of one member selected from the group consisting of sapphire, silicon carbide, gallium nitride, silicon, gallium phosphide, and gallium arsenide.

6. A semiconductor device according to claim 1,

wherein said substrate is formed from a cubic crystal material on a (111) face of which said undercoat layer is formed.

7. A semiconductor device according to claim 1, further comprising a titanium layer interposed between said undercoat layer and said group III nitride compound semiconductor layer.

8. A semiconductor device according to claim 1, wherein said undercoat layer is heated at a temperature of from 600 to 1200℃ before said group III nitride compound semiconductor layer is formed.

9. A semiconductor device according to claim 1, further comprising a buffer layer of a group III nitride compound semiconductor interposed between said group III nitride compound semiconductor layer and said undercoat layer.

10. A semiconductor device according to claim 9, wherein said buffer layer is formed by a metal organic chemical vapor deposition method at a temperature substantially equal to or higher than the temperature for the growth of said group III nitride compound semiconductor layer.

11. A semiconductor device according to claim 9, wherein said buffer layer is formed by any one of a sputtering method, an evaporation method and an ion plating method.

12. A semiconductor device according to claim 1, wherein said undercoat layer includes a titanium layer formed on said substrate, and a heat-resisting layer interposed between said substrate and said titanium layer to thermally insulate said substrate and said titanium layer from each other.

13. A semiconductor device according to claim 12, wherein said substrate is formed of one member selected from the group consisting of sapphire, silicone carbide, gallium nitride, silicone, gallium phosphide, and gallium arsenide.

14. A semiconductor device according to claim 12, wherein said heat-resisting layer is formed of one of high-melting metal and metal nitride.

15. A semiconductor device according to claim 13, wherein: said high-melting metal is one of Ta and Mo; and said metal nitride is one member selected from the group consisting of TiN, ZrN, HfN, and tantalum nitride.

16. A semiconductor device according to claim 12, wherein said heat-resisting layer is formed on a (111) face of said substrate.

17. A semiconductor device according to claim 12, wherein said titanium layer and said heat-resisting layer are laminated repetitively so as to alternate with each other.

18. A semiconductor device according to claim 17, wherein each of said titanium layers has a thickness of from 10 to 250Å.

19. A semiconductor device according to claim 17, wherein each of said heat-resisting layers has a melting point substantially higher than the temperature for the formation of said group III nitride compound semiconductor layer.

20. A semiconductor device according to claim 1, further comprising a first electrode provided on said undercoat layer.

21. A semiconductor device according to claim 19, wherein shape of said device is square in plan view; and said first electrode is provided so as to be put between two sides constituting a corner portion of said square device.

22. A semiconductor device according to claim 19, further comprising a second electrode connected onto said group III nitride compound semiconductor layer.